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Riverside Industrial Park Superfund Site
Newark, NJ

Dispute Resolution Proceeding Pursuant to Administrative Settlement Agreement and Order on Consent for Remedial Investigation and Feasibility Study, CERCLA Docket No. 02-2014-2011

EPA Region 2 Staff Statement of Position

_____, 2020

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Introduction

The U.S. Environmental Protection Agency Region 2 ("Region 2" or "the Region") respectfully submits the following statement of position in response to PPG Industries, Inc.'s July 30, 2020, letter to the Region entitled "Feasibility Study Report: Written Notification of Objections and Invocation of Dispute Resolution, Riverside Industrial Park Superfund Site – Essex County, Newark, New Jersey" (the "Dispute"). This response sets forth the position of Region 2 staff on the subject of the dispute and is being provided to the Director of EPA Region 2's Superfund and Emergency Management Division ("SEMD") (formerly the Emergency and Remedial Response Division) for purposes of reaching a decision, pursuant to Paragraph 62 of Administrative Settlement Agreement and Order on Consent for Remedial Investigation and Feasibility Study ("ASAOC"), CERCLA Docket No. 02-2014-2011. PPG invoked the ASAOC's dispute resolution procedures with respect to (i) the process followed by EPA when it finalized the Feasibility Study Report ("FS Report") and so notified PPG by letter dated July 21, 2020, and (ii) revisions made by EPA to the FS Report, as outlined in its July 10, 2020 communication and as set forth in the final FS Report.

Contrary to PPG's claims in the Dispute, neither the Region's decision to complete the FS Report nor its revisions to that document were arbitrary and capricious. Region 2 followed the procedural provisions of the ASAOC in directing PPG to modify the FS Report, and in modifying and completing the FS Report when PPG did not make the necessary modifications. The Region's revisions to the FS Report were technically and substantively sound~~Region 2 followed the procedural provisions of the ASAOC in directing PPG to modify the FS Report, and when PPG did not make those modifications, modifying and completing the FS Report itself with the necessary revisions; and the Region's revisions to the FS Report were technically and substantively sound~~.

In accordance with Paragraph 41 of the ASAOC, by letter dated June 23, 2020 (*See* Exhibit 1.A.), the Region notified PPG of deficiencies in PPG's ~~its~~ June 8, 2020, draft FS Report. ~~-~~After several additional exchanges, in its email communication dated July 10, 2020 (*See* Exhibit 2), EPA requested that PPG provide the FS Report, with modifications, by July 17, 2020, thus providing PPG with more than 21 days to cure the deficiencies; 21 days is the timeframe identified in the ASAOC for PPG to revise the FS Report. ~~-~~The revised FS Report submitted by PPG on July 17, 2020, did not meet the Region's directions; therefore, the Region modified the FS Report and notified PPG on July 21, 2020 (*See* Exhibit 3), that because the revised FS Report did not meet EPA's requirements, the Region had modified the FS Report and would be placing the final FS Report in the administrative record ~~(*See* Exhibit 3)~~. The Region's June 23, 2020 conditional approval letter and subsequent communication on July 10 clearly explained the deficiencies, and the Region completed the report only after PPG's ~~repeated~~ failure to cure the deficiencies in timely manner.

Likewise, the revisions made by Region 2 to the FS Report, consistent with the directions given on June 23, reiterated and clarified in the Region's July 10, 2020 communication, are technically sound and supported by factual historical information and ~~collected~~ site data. ~~. Material flaws presented by~~ In contrast, PPG arguments intended to show that EPA's revisions contained material flaws ~~are unfounded and~~ are not supported by the findings in the final Remedial Investigation

Commented [FS1]: Style/consistency comment Sometimes we use quotation marks in these definitions, and sometimes we do not Please pick an approach and be consistent

[redacted] Exemption 5, Deliberative, Attorney-Client

Commented [FS3R2]: I like your suggested changes

Commented [SJ4R2]: I made the change

Commented [J5]: Adding exhibits to a folder, I will share later

[redacted] Exemption 5, Deliberative, Attorney-Client

Commented [FD7]: Josh did that-

Timeline and documents.msg

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("RI") Report approved by EPA.

[redacted] Exemption 5, Deliberative, Attorney-Client

PPG's assertions to the side, it is PPG that has acted inappropriately by repeatedly failing to follow the Region's directions. In fact, PPG turns the ASAOC approval process on its head when it suggests that EPA must "address the material flaws" in EPA's June 23 and July 10 communications concerning required revisions ~~mark up of~~ the FS Report~~s~~ to PPG's satisfaction, whereas under the ASAOC it is PPG's responsibility to perfume work properly and promptly, including by submitting ~~a~~ deliverable ~~that is~~ ~~unapprovable~~~~ceptable~~ to the Region that the Region is able to approve in accordance with the provisions of the ASAOC, the SOW, CERCLA, the NCP and EPA guidance.

I. Region 2's Completion of the FS Report was Procedurally Consistent with the ASAOC and was not Arbitrary and Capricious

A. The Region's June 23, 2020, Conditional Approval Letter Identified Deficiencies in PPG's June 8, 2020 FS Report

The Region's June 23, 2020, conditional approval letter notified PPG that, pursuant to Paragraph 41(b) of the ASAOC, EPA was approving PPG's June 8, 2020, draft FS Report "conditioned upon PPG's incorporation of the attached comments from the attached EPA mark-up of each document [e.g., FS document text mark-up – to incorporate language.., response to PPG's June 8 submittal comments, revised figures, revised tables, revised appendix (A and B)] into" the FS Report. (*See* Exhibit~~s~~ 1.B. through 1.J.). Specifically, the June 23, 2020 conditional approval letter included attachments that clearly identified provisions in PPG's June 8, 2020 draft FS Report that were unacceptable to the Region and needed to be corrected in order for the Region to approve the document. Such unacceptable provisions were "deficiencies" subject to correction pursuant to ASAOC Paragraph 41. Deficiencies in the mark-ups sent to PPG included but were not limited to the addition of certain metals in groundwater in the discussion of ~~as~~ site-related contaminants ((*See* Exhibit 1.C., at ~~-~~comment nos. 49 and 51~~,~~), the statement that groundwater restoration must be to Cclass IIA standards [Id. ~~at (*See* Exhibit 1.C. at, comment nos.~~ 26, 88, 89, and 116]~~)~~, and the statement that Monitored Natural Attenuation must be screened out since it is not proven to be a viable alternative [*Id.* at comment nos. 116, 118, 140, and 141]. Furthermore, among other edits, the Region and New Jersey Department of Environmental Protection (NJDEP) identified significant concerns with PPG's use of compliance averaging and provided ~~PPG~~ detailed ~~changes~~ edits that PPG was to make throughout the draft FS Report (i.e., figure, tables, and text changes) in its ~~for~~ application of ~~ying~~ point by point compliance ~~among other edits~~ (*See* Exhibits 1.B. through 1.J~~H~~.).

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[redacted] Exemption 5, Deliberative, Attorney-Client

PPG asserts that the Region did not follow the procedural requirements of the ASAOC because, in PPG's view, the Region did not provide PPG with the notice of deficiency and opportunity to cure identified in ~~required by~~ Paragraph 41 of the ASAOC (Dispute, p. 4.), which provides:

> After review of any plan, report or other item that is required to be submitted for approval pursuant to this Settlement Agreement, EPA ~~[the Region]~~ shall, in a notice to Respondent:

Commented [FS24]: block quotes should be indented

Also, I think we can use the language of the AOC – refer to EPA, not the Region, in this place

(a) approve, in whole or in part, the submission; (b) approve the submission upon specified conditions; (c) modify the submission to cure the deficiencies; (d) disapprove, in whole or in part, the submission, directing that Respondent modify the submission; or (e) any combination of the above. However, EPA shall not modify a submission without first providing Respondent at least one notice of deficiency and an opportunity to cure within 21 days or as specified in the RI/FS Work Plan, except where to do so would cause serious disruption to the Work or where previous submission(s) have been disapproved because of material defects.

PPG argues that the Region's June 23, 2020 conditional approval letter did not identify "deficiencies" in the June 8 FSR because it did not include the word "deficiencies." (Dispute, p. 4.) If the Region had not found the June 8, 2020 draft FS Report to be deficient, however, there would have been no need for the Region to require changes to the draft FS Report as a condition of approving it. EPA would simply have approved the June 8, 2020 draft FS Report pursuant to Paragraph 41(a) of the ASAOC without conditions. PPG's argument that the Region's June 23, 2020 conditional approval letter did not identify deficiencies simply because the letter did not mention the word "deficiencies" strains credulity given that the Region's comment matrix enclosed with the June 23, 2020 letter identified thirty-three instances where the text of the June 8, 2020 draft FS Report needed to be modified because as discussed above, PPG had not fully addressed prior Region 2 comments on earlier drafts of the FS Report. ~~(e.g., *See* I.A.¶ 1, above), *See* Exhibit 1.C. at comment 33, regarding applicable or relevant and appropriate requirements), and two instances where PPG's response to a Region 2comment was not acceptable (e.g., comment 144, regarding light non-aqueous phase liquid. [*Id.*].~~ The Region~~EPA~~ clearly stated in its June 23, 2020 conditional approval letter that its approval of the June 8, 2020 draft FS Report was subject to those corrections being made. The June 8, 2020 draft FS Report was by definition "deficient" because it contained incorrect or otherwise unacceptable language~~provisions~~. The Region's June 23, 2020, conditional approval letter therefore notified PPG that its submission was deficient.

There is no basis for PPG's assertion that deficiencies cannot be addressed under Paragraph 41(b), but "are to be identified and addressed under Paragraph 41(d), which relates to disapprovals, not Paragraph 41(b), which addresses conditional approvals."[1] (Dispute, p. 4). Under Paragraph 41(b), the ~~Region~~ "Region "may approve the submission upon specified conditions." The ASAOC does not define "conditions" and there is no provision in the ASAOC that precludes the Region from conditioning an approval on PPG's correction of deficiencies. In fact, it is difficult to imagine why the Region would choose to conditionally approve a deficiency-free deliverable.

PPG also argues that if the Region had identified deficiencies in the June 8, 2020 draft FS Report, "it would have disapproved the submittal under Paragraph 41(d), which would require PPG to" revise and resubmit the report within 21 days." (Dispute, p. 4). While Region 2 had the option of disapproving and requiring PPG to resubmit the report under Paragraph 41(d), disapproving a deliverable under Paragraph 41(d) is not the only available avenue under the ASAOC for correcting deficiencies. In the spirit of working cooperatively while keeping the RI/FS on schedule, and as PPG well knows, the Region has in the past conditionally approved PPG deliverables under Paragraph 41(b), with the approval being subject to PPG the ~~correcting~~ certain

[1] Deficiencies may also be addressed under Paragraph 41(c), under which EPA may "modify the submission to cure the deficiencies."

Commented [SJ25]: This seems to duplicate examples of deficiencies in the conditional approval Some examples already given in the first paragraph of section I A

Commented [FS26R25]: No need to give a paragraph citation if we are just referring back to text above in this section

Commented [SJ27R25]: I am confused, should I keep (e g , See I A)

Commented [FS28R25]: No, I don't think so Citing to exhibits makes sense, or earlier sections, but there is no need to put in a citation to a paragraph in the same section Assume the reader will remember what he/she just read on the previous page

Could say, discussed above

issues identified by EPA in its conditional approval.[2] The Region's June 23, 2020 conditional approval was similarly provided in that same spirit. Unlike PPG's responses to the Region's aforementioned prior conditional approvals for Riverside (*See* fn 2), here PPG simply continually rejected the Region's direction and even after further discussions with the Region ~~to resolve~~, PPG did not make the necessary revisions. ~~acceptable progress toward resolving these issues.~~

The fact that the Region was willing to continue discussing the changes required by the June 23, 2020 conditional approval letter in no way suggests that the Region did not consider the draft June 8, 2020 FS Report to be deficient, as suggested by PPG. (Dispute, p. 5). Similarly, whether PPG disagreed with the Region as to the technical merit of those edits has no bearing on the particular question of whether Region 2 identified to PPG that it considered the draft FS Report to be deficient. PPG states that "[o]n July 17, 2020, PPG and Woodard & Curran reached out to [Region 2] to discuss [Region 2's] arbitrary and capricious July 10 Revisions and July 14 letter, which still failed to address the material flaws in [the Region's] June 23 Revisions." (Dispute, p. 6). This statement has the ASAOC's document approval provisions backwards; it is PPG that is responsible for submitting a deliverable that is acceptable to the Region, and not the other way around. ~~More to the point,~~ EPA ~~had~~ identified deficient provisions of the draft June 8 FS Report ~~including those set forth in Section I.A.¶ 1, above~~, but was willing to work with PPG to help PPG understand and implement ~~reach a mutually acceptable resolution of~~ EPA's comments. Yet, d~~D~~espite the Region's efforts PPG simply was not willing to submit an acceptable FS Report.

PPG argues ~~claims~~ that "[t]he facts show that USEPA and PPG were not operating as though PPG's [FS Report] submittals were deficient. Instead, [Region 2] and PPG were engaged in a cooperative process to revise the [FS Report] and address the material flaws in [Region 2's ~~s] Junes~~] June 23 and July 10 [FS Reports]." Again, PPG has the process backwards. The Region found flaws in PPG's draft technical document that prevented the Region from approving it as submitted, but in an effort to finalize the document, gave PPG ~~(~~and its representatives ~~environmental attoneysattorneys)~~ very detailed comments, and conditioned approval on incorporation of those comments. When PPG apparently struggled to understand and/or accept Region 2's direction, the Region showed great patience and a willingness to work with PPG ~~and its legal counsel~~, just as the Region had done in the past with ~~numerous~~ other RI/FS deliverables for the site (*See* fn. 2, above, for examples) providing another layer of clarification in the form of its July 10, 2020 markup PPG was not in a "catch-22" (Dispute, fn. 2) because there was no contradictory condition. Rather, the direction that the Region provided in its "conditional ~~"~~ [if-then] approval," as per the ASAOC, was clear, concise, correct (procedurally and substantively), and was reinforced consistently and ~~often. In~~often. In fact, PPG and the Region had several exchanges concerning the Region's comments and directions; however, on certain issues, such as EPA's directions ~~for~~

[redacted]
Exemption 5, Deliberative, Attorney-Client

[2] RI/FS submittals "conditionally approved" by EPA and then submitted in revised form by PPG consistent with the Region's directions, include: Remedial Investigation and Feasibility Study Work Plan, Riverside Industrial Park Superfund Site, Newark, New Jersey, Revised: July 18, 2017; Site Characterization Summary Report Addendum, Riverside Industrial Park Superfund Site, October 2018; Development and Screening of Remedial Alternatives Technical Memorandum, Riverside Industrial Park Superfund Site, August 28, 2019; SLERA - Draft (Version 2) Screening Level Ecological Risk Assessment, Riverside Industrial Park Superfund Site, January 17, 2020; BHHRA - Draft (Version 2) Baseline Human Health Risk Assessment, Riverside Industrial Park Superfund Site, January 17, 2020; RI - Draft (Version 2) Remedial Investigation Report, Riverside Industrial Park Superfund Site, January 17, 2020~~; FS - Feasibility Study Report, Riverside Industrial Park Superfund Site, June 8, 2020~~.

~~example, whether~~ to screen~~ing~~ out A~~a~~lternative 5, incorporate~~ting~~ discussion o~~fn~~ potential impacts to the adjacenet ~~superfund site~~ Diamond Alkali Superfund site, ~~OU2,~~ and incorporate~~ing~~ factual information ~~statements~~ regarding lead and PPG's past operations. PPG refused to accept the Region's comments. Further, it is notable that in response ~~with regard~~ to PPG's ~~objection~~objection to incorporating~~e~~ factual statements regarding its use of lead in its past operations at the site, ~~that~~ the Region ~~in the spirit of cooperation invited~~ offered to discuss with PPG ~~to identify~~ "any not factually accurate" statement(s) ~~-~~ identified by ~~in that regard which the Region would then review and discuss with~~ PPG. PPG did not identify one.

[redacted] ~~company was unwilling to prepare a report without deficiencies and that EPA could approve~~

Exemption 5, Deliberative, Attorney-Client

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Commented [FS43R41]: Thanks

Commented [FD44]: Need SEMD to weigh in

B. The Region P~~p~~rovided PPG with 21 D~~d~~ays to C~~c~~orrect the June 8 Draft FS Report B~~b~~efore M~~m~~odifying the D~~d~~ocument, as R~~r~~equired by the ASAOC

Exemption 5, Deliberative, Attorney-Client

Commented [FS46]: Consistency with A = caps

After the Region identified deficiencies in the June 8 FS Report that needed to be corrected in order for the Region to approve the document, under Paragraph 41 of the ASAOC Region 2 had the ability to modify the FS Report after providing PPG "an opportunity to cure within 21 days or as specified in the RI/FS Work Plan, except where to do so would cause serious disruption to the Work or where previous submission(s) have been disapproved because of material defects."

PPG argues that EPA's June 23, 2020, email request for PPG to respond to the Region's June 23, 2020 conditional approval letter within seven days is evidence that the Region did not consider the conditional approval to be a notice of deficiency that triggered the 21-day period for corrections. (Dispute p. 4, fn. 1). PPG~~'s argument is incorrect and~~ confuses different provisions of Paragraph 41. The 21-day period in Paragraph 41 is a procedural requirement that requires the Region to allow PPG 21 days to cure a deficiency before modifying a submittal itself. The ASAOC, however, does not state that the Region must give PPG 21 days to correct an unacceptable provision of a submittal in order for that unacceptable provision to be deemed a "deficiency." Moreover, the Region did satisfy the 21-day requirement before it modified the deficient FS Report: Region 2's conditional approval letter identified unacceptable provisions (i.e., deficiencies) in PPG's draft FS Report and was transmitted to PPG on June 23. On June 30, PPG submitted a revised FS Report that did not adequately address EPA's comments. PPG notes in the Dispute that the Region ~~-~~and PPG engaged in several discussions and written exchanges in an effort to reach agreement on the deficiencies that the Region ~~-~~corrected in its June 23, 2020 conditional approval, including a telephone conference, and the Region's July 10, 2020 email. PPG and the Region also engaged in a technical exchange – another effort by which the Region attempted to assist PPG in greater understanding of the need for the Region's revisions. At the conclusion of these exchanges, the Region directed PPG to submit the FS Report by July 17. 2020, 24 days after its receipt of the Region's June 23, 2020 conditional approval letter. Ultimately, those discussions were fruitless insofar as PPG refused to make necessary modifications to the FS Report, instead providing the July 17, 2020 revised FS Report that did not include those changes that the Region provided as a condition of approval in its June 23, 2020 letter.

PPG believes that the Region's statement in its July 21 letter that the agency's approval "was conditioned upon PPG's incorporation into the final FS report of language provided by EPA on

June 23 in a mark-up of the June 2020 FS, to cure deficiencies identified by the Region in the June 2020 FS" is "contradicted" by the fact that the final FS Report issued by EPA on July 21 is not the same version Region 2 provided on June 23. (Dispute, p. 5). To the contrary, the fact that the FS Report completed by Region 2 differed from the June 23 version is immaterial to whether the Region's June 23 letter notified PPG of deficiencies in its June 8 FS Report. There is nothing in the ASAOC that constrains what the Region must include in a submission that it completes pursuant to Paragraph 41(c). While the Region accepted certain PPG comments during the discussions that occurred between June 23 and July 21, the Region's inclusion of those comments ~~cooperation on those points~~ in no way means that the Region "abandoned" the June 23 version, as PPG claims. The Region indicated in its June 23 conditional approval letter that it would approve the FS Report only if PPG made certain corrections to the June 8 FS Report. Twenty-four days passed between EPA's ~~July~~ June 23 conditional approval letter and PPG's July 17 draft FS Report, during which time the Region ~~and PPG~~ attempted to explain to PPG how and why to revise the ~~reach agreement on an~~ FS Report such that it would be acceptable to Region 2. ~~During these discussions, EPA explained to PPG the changes that would be needed in order for the FS Report to be acceptable, but~~ Ultimately, PPG refused to sufficiently address the deficiencies ~~, including deficiencies~~ identified in the Region's June 23 markup. PPG was given more than 21 days to correct the outstanding deficiencies ~~identified in EPA's the June 23 FS Report~~, and the Region's decision to complete the FS Report pursuant to ASAOC Paragraph 41(c) complied with the 21-day requirement of Paragraph 41.

II. Region 2's Modifications of the FS Report are Supported by the Record and are not Arbitrary and Capricious

A. Region 2's Ceonceptual Ssite Mmodel is Ssupported by Ffactual Hhistorical Iinformation and ~~and Site~~ Data

In ~~thethe~~ire Ddispute, ~~Section IV, Page 7, Paragraph 1, Sentences 3 and 4: "PPG[3]~~ describes the Region's conceptual site model (CSM) as "~~is~~ based on a theory that metal pigments used in paint manufacturing are present in surface soil/fill and are being mobilized into subsurface soil/fill and then into saturated soil/fill, which then results in elevated lead concentrations in groundwater" and asserts "that ~~. Thth~~is CSM is not supported by Site data or the RI~~:~~" (Dispute, p. 7). As discussed below, both the data and information about historical Site operations support the Region~~EPA~~'s determination that historic Site operations are a significant source of soil and groundwater contamination at the Site. Region 2~~EPA~~'s CSM therefore is consistent with the data presented in the RI Report.

Both the S~~s~~ite data and evidence about historical S~~s~~ite operations support Region~~EPA~~2's determination former lead paint manufacturing operations at the Site are a significant source of lead contamination in surface soil. ~~F~~From approximately 1903 to 1971, the Site was used for paint, varnish, linseed oil and resin manufacturing by Patton Paint Company (Patton), which merged into the Paint and Varnish Division of Pittsburgh Plate Glass Company in 1920. Pittsburgh Plate Glass Company changed its name to PPG Industries, Inc. in 1968. PPG conveyed its interest in the Site in 1971. PPG's ~~The~~ Remedial Investigation (RI) Report (Woodard & Curran, 2020) states on page

[3] ~~In this response, EPA refers to correspondence from Latham and Watkins LLP and Woodard and Curran on behalf of PPG as being from PPG.~~

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Commented [FS55]: I took this from the AOC, so that the relationship of Patton to PPG would be clear to the reader

1-3 that "Pigments would have been brought to the Site and used in the manufacture of paints. These were often metallic chemicals and would have included compounds of cadmium, chromium, lead, titanium and zinc. Basic lead carbonate (white lead) would have been one of the pigments used as a raw material." This statement is consistent with the following two historical references to the use of basic lead carbonate on the Site:

- A historical brochure for Patton, PPG's corporate ~~predessor~~predecessor ~~at the Site, the Patton Paint Company's (Patton's)~~ Sun-Proof Paints printed circa 1897 states that "The composition of Patton~~'s~~'s White is printed on every can, and is strictly pure white lead and zinc oxide, both doubly ground in strictly pure linseed oil to impalpable fineness, with the right amount of silica (Patton's secret)~~.~~" (*See* Exhibit 4 at pg. 1).
- Patton employee Frank Lane testified about ~~on~~ Patton's use of lead carbonate and zinc oxide to the United States Supreme Court in ~~"~~Heath & Milligan Mfg. Co. ~~anufacturing Company, The Sherwin-Williams Company, et al~~ vs. ~~J.H.~~ Worst, 207 U.S. 338 (1907)~~, Director of the North Dakota Government Agricultural Experiment Station" in the October Term, 1906 (Appeal from the Circuit Court of the US for the District of North Dakota)~~ on page 190 (Paragraph 323) of the Court's Transcript of Record. (*See* Exhibits 5.A. ~~-~~for the entire transcript; and 5.B. ~~-~~for a relevant clip of the transcript).

The original paint plant was constructed in the early 1900s by the Patton Paint Company, which merged into the Paint and Varnish Division of Pittsburgh Plate Glass Company in 1920, which has been known as PPG Industries, Inc. Historical manufacture of white lead pigment was originally accomplished by corroding sheets or plates of lead (sometimes referred to as lead buckles) by applying heat and moisture, carbon dioxide, and acetic acid vapor. The corrosion product created from the lead sheets was the lead carbonate pigment, which was scraped off and finely ground into a powder. While it is not known if Patton, and later PPG, produced lead pigments ~~were produced~~ at the Site from metallic lead or purchased and conveyed to the Site as lead carbonate, the large amount of paint known to have been manufactured by Patton at the Site suggests that the company used a large quantity of white lead pigment at the Site in connection with those operations. T~~t~~he amount of lead carbonate ~~used~~ that Patton used ~~at the Site for paint manufacturing~~ can be conservatively estimated based on the volume of documented paint production at the Site. The document "Use of United States Government Specification Paint and Paint Materials" by P.H. Walker and E.F. Hickson (August 1924) contains minimum recommended quantities of components in certain paints. (*See* Exhibit 6.A. at 36~~—.X).ations for paint formulations~~. ~~-~~Paint formulations based on a combination of white lead and zinc oxide pigments (as used by Patton) are addressed in rows 7-9 of Table 1 in ~~this~~ the referenced document and recommend 50 pounds (lbs) white lead and 50 lbs of zinc oxide to yield anywhere from 7 to 11 ¾ gallons of paint per batch (*See* Exhibit 6.B., figure, embedded below). Patton's operations at the Site ~~plant in the City of Newark (at what is now the Site) are~~is estimated to have produced about 42,000 gallons of paint per week (Bernardsville News, Bernardsville, NJ, January 27, 1903). ~~-~~For a white lead/zinc oxide mixture similar to that specified by the United States ~~g~~Government in 1924, and assuming approximately 50 lbs of white lead for approximately every 10 gallons of paint manufactured, the plant would have required 210,000 lbs of white lead pigment per week as a feedstock. (Again, this is a conservative estimate of Patton's paint production post-1903 as ~~anecdoctal~~anecdotal information suggests that Patton's ~~Newark~~ historic paint facility operations at what is now the

Commented [SJ56]: Yes, First is was Patton Paint, then they merged and became known as Pittsburgh Plate Glass, which is generally known as PPG

Commented [FD57]: is this how Patton's appears in the quote? Also, either provide a link to this document or attach excerpt as an exhibit

Commented [J58R57]: Fixed, should be Pattons'

Commented [FD59]: We should include a link to this document or list at the end as a reference

Commented [J60R59]: I am not sure how to reference this We may need to add it as an attachment

Commented [FD61]: This position paper cites to a number of other outside sources The should either be listed as references, or a link should be provided where available, in case Pat (or PPG) wants to look at any of them

Commented [J62R61]: As discussed, I will create appendix with attachments and add references as appropriate

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Commented [J64R63]: Len sent around a copy of the transcript, I will add as attachment

Commented [SJ65]: Added a sentence

Exemption 5, Deliberative, Attorney-Client

Commented [J67R66]: See edit

Commented [SM68]: Where is Table 1?

Commented [J69R68]: Added exhibit below with copy of the table and edited language

Commented [FD70]: Cite a basis for this statement, please

Commented [J71R70]: Reaching out to WSP

Commented [FS72R70]: It "Patton's plant in the City of Newark" the Riverside plant? If so, that needs to be stated

Commented [SJ73R70]: They had a couple paint manufacturing plants but generally we have not referenced the plant by location I changed text to be simply "at the Site"

Commented [FS74]: What is the anecdotal information?

Commented [SJ75R74]: I believe it's the news paper articles we reference above The information is not directly from PPG

Commented [FS76R74]: But the article is a 1903 article, and this anecdotal information has to do with military ...

Site included ~~was~~ fulfilling military contracts for the United States during World War I, which would have doubled to ~~trippled~~tripled the above-estimated paint production).

TABLE 1.—*Mixing formulas using Federal Specifications Board paste pigments, and dry red lead*

Formula number	Paste white lead, Federal Specifications Board Nos. 5 or 6	Paste zinc oxide, Federal Specifications Board Nos. 8 or 9	Dry red lead, Federal Specifications Board No. 11	Paste red lead, Federal Specifications Board No. 11	Paste titanium pigment, Federal Specifications Board No. 115	Raw linseed oil, Federal Specifications Board No. 4	Boiled linseed oil, Federal Specifications Board No. 4	Turpentine, Federal Specifications Board No. 7	Drier, Federal Specifications Board No. 20	Varnish, Federal Specifications Board Nos. 18 or 22	Approximate yield	Used for—
	Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Gals.*	*Gals.*	*Gals.*	*Pts.*	*Pts.*	*Gals.*	
1	100					3 to 4		2 to 4	1 to 2		7½ to 11	(1)
2	100						7	1[2]			10½	(2)
3	100					7		1[2]	3		11	(3)
4	100					1 to 2		1½ to 2[2]	1		6 to 7	(4)
5	100					3 to 4½		¼ to ¾[2]	1		6½ to 7½	(4)
6	100					1½ to 3		¾ to 1½	1 to 6		4¼ to 6½	(4)
7	50	50				3 to 4		2 to 4	3 to 4		8½ to 11¼	(5)
8	50	50				1½ to 2		2 to 3[2]	4		7¼ to 8½	(4)
9	50	50				3 to 4		½ to ¾[2]	2 to 3		7 to 8½	(6)
10			100			3½		½[2]	2½		5¼	(7)
11				100		5		½[2]	2½		5¼	(7)
12	60		40			2 to 4		1¼ to 2	1 to 2		6 to 8½	(3)
13	60			40		1¾ to 4		1¾ to 2	1 to 2		6 to 7	(3)
14		40			60	4 to 4½		2 to 4	4 to 5		10¾ to 13½	(3)
14		40			60	2 to 2½		2 to 3[2]	4		8¾ to 10¾	(4)
16		40			60	4 to 4½		½ to ¾[2]	4 to 5		9¼ to 10	(4)

[1] For first (priming) coats, wood, new work.
[2] Volatile mineral spirits F. S. B. No. 16 can be used in place of turpentine in this formula.
[3] For first (priming) coats on plaster, concrete, cement, brick, and stone, new work.
[4] For body coats, wood, outside, new, and first coat repainting.
[5] For finish coats, outside.
[6] For finish coats, inside, flat to eggshell gloss.
[7] For first (priming) coats on metal.

NOTE 1.—In nearly all of the above formulas, except for priming coats on new wood, a mixture of one-third to one-half boiled linseed oil and the remainder raw linseed oil may be substituted for the raw oil, omitting the drier.

NOTE 2.—In using the mixing formulas read across the page on the horizontal line; for example, formula No. 9 reads thus:

50 pounds paste white lead,
50 pounds paste zinc oxide,
3 to 4 gallons raw linseed oil,
½ to ¾ gallons turpentine,
2 to 3 pints drier.
7 to 8½ gallons of paint, for finish coats, outside.

~~*Exhibit Figure (See*~~ Exhibit 6.B.: 1924 United States Government specifications for mixing components of paint~~).~~

In addition to its use in paint manufacturing, lead was historically added to varnishes as a drying agent. –"The Influence of lead Ions on the Drying of Oils" by Charles Tumosa and Marion Mecklenburg (published by the Smithsonian Center for Materials Research and Education)) addresses both lead pigments in paint and the use of "lead compounds…(to)…alter the drying behavior and physical properties of oil paints and varnishes~~.~~." (*See* Exhibit 7). The article indicates that by the late nineteenth to early twentieth century, manufacturers found that a combination of cobalt, manganese, and lead compounds was efficient to cause drying and polymerization in oils. The 1923 PPG publication "Glass, Paints, Varnishes and Brushes, Their History, Manufacture and Use (copyright 1923 Pittsburgh Plate Glass Company)" states that "An extensive variety of varnishes can be made by changing the operations, the gums, the oils, and the driers used … When the gums, oil, and metallic drying salts have been properly combined…" (*See* Exhibit 8.A., "Paint Section, The Manufacture of Varnish," at 23)~~.~~ Based on this information it is likely that PPG also added lead to varnishes as a drying agent, as it was commonent practice within the industry at the time.

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In addition, an article titled "Power Plant in the Patton Paint Co., Newark, N.J." in the October 15, 1903 issue of *The Engineer* (*See* Exhibits 9.A. and 9.B.) states that there were two motors used to drive lead chasers at the facility, "pieces of apparatus in which white lead, the foundation for all of a certain class of paints, is worked and freed of its contained moisture.-" -Motors at the plant were "housed to protect them from the powdered white lead and dust which is very apt to be floating in the air … A 7-horsepower motor … drives an air compressor … used to blow dust out of motor armatures, etc …" Historical Patton/PPG plant housekeeping activities (such as floor cleaning and sweeping) ~~may likely~~likely ~~have~~ released the powdered white lead pigment to surface soil/fill material, specifically since most buildings were constructed with drains and wall slots with hinged flappers at floor level to allow discharge of sweepings/floor washings to outside the building. -The photo immediately below (*Seee* Exhibit 9.C. picture, embedded below) shows a floor flapper at Building 7 at the Site (*See* Exhibit 10.A~~B.X~~ at Figure 2-1~~[map of site]~~ for map of the Site). Elevated concentrations of lead have been detected in soil immediately outside Building 7 ~~near the flappers~~.

Exhibit 9.C.: Photograph of floor flapper on Building #7

Below is a photograph of the Patton facility from the book "Glass, Paints, Varnishes and Brushes, Their History, Manufacture and Use (copyright 1923 Pittsburgh Plate Glass Company)" (*See* Exhibit 8.A., figure, ~~is~~ embedded below). The photo depicts ~~shows a picture of~~ Building #9 and Building #6 (looking northeast) on page 24 of its "Paint Section". Building 7A is also shown on the right side of the picture; Building 7A would eventually be replaced by the current Building #7. Note that~~In the picture,~~ barrels and various materials are stored on the ground in front of the buildings. -These building border Lot 63, where the focused lead removal is proposed to occur. Building 7 is on Lot 63. (~~n~~Note that Lot 63 is one ~~o~~of 15 lots on the Site. (*Sse* Exhibit 10.B~~A~~., the

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Commented [FD82]: Include as a reference and provide a link if possible

Commented [J83R82]: Will do

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RI Report, at 1-3 through 1-30[~~page ranges~~] for more information regarding current and historical operations ~~on on Lot 63 and the other~~ for each lots).

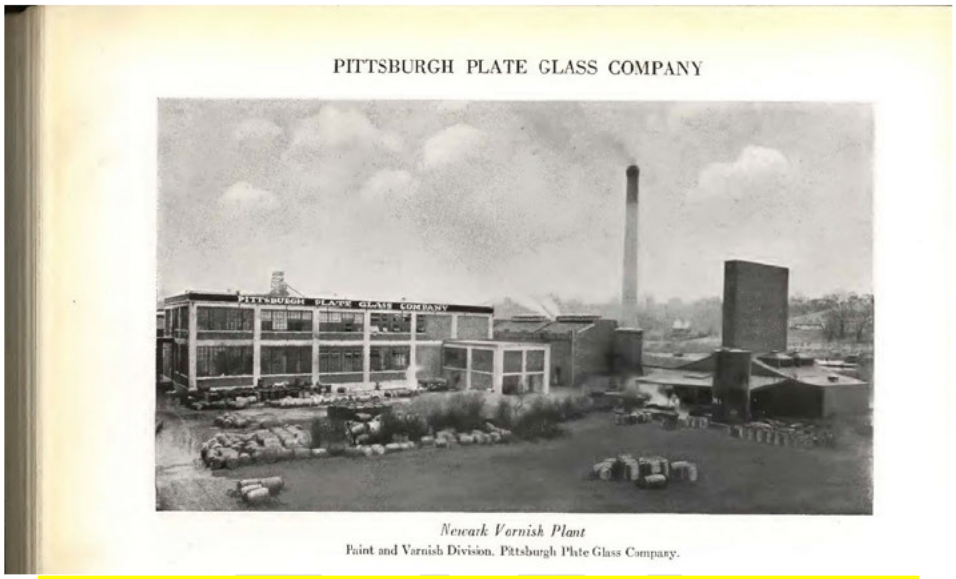

Exhibit ~~8A2~~: PPG paint manufacturing plant in City of Newark, New Jersey (now the Site)

The facility operations discussed above support the conclusion ~~suggest~~ that lead and zinc were released into the soil/fill material as a result of ~~It is possible that~~ paint plant housekeeping activities, along with incidental releases of white lead and zinc oxide pigments during material storage, handling, and transfer~~, transported lead and zinc into the soil/fill material~~. The likelihood that PPG~~atton~~ operations are~~is~~ a source of lead contamination in Site soil also ~~This hypothesis~~ is supported by a positive correlation between lead and zinc in the soil/fill material samples collected during the RI, with a linear regression coefficient of R^2 of 0.72. The highest reported levels of lead in the RI borings are ~~reported~~ on Lot 63 and correlated with the highest levels of zinc (refer to the cluster of green points on the right side of the graphic, *see* Exhibit 11, figure, embedded below~~3~~), strongly suggesting that historical facility operations are a primary source of lead and zinc~~.~~ at this location.

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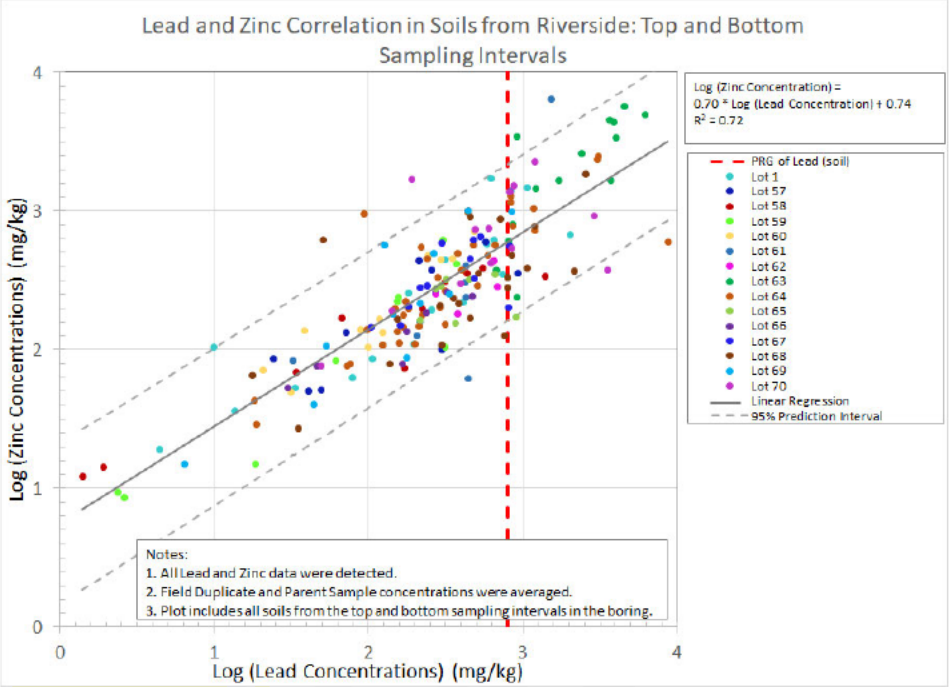
Commented [J91R90]: I agree, changed to PPG



~~*Exhibit Figure*~~*Exhibit 11*~~3~~*: Lead and Zinc Correlation in Soil/Fill Material from Riverside (all samples)*

There also is evidence that Patton disposed of paint waste and other materials directly into the Passaic River adjacent to the Site. As noted in the RI Report on page 1-5 *[Id.]*~~(~~, the U.S. Army Corps of Engineers (USACE) alleged on February 1, 1915 that Patton of Newark dumped ashes, tin cans, waste paint material, and "refuse of various sorts" into the Passaic River, "for a length of 175 feet along the water front and had filled out for a considerable distance beyond the State riparian lines without any protection in the form of a bulkhead or retaining wall to prevent the escape of the material into the channel of the river." ~~The RI also notes that~~ The ~~the~~ Annual Reports, War Department, Fiscal Year Ended June 30, 1916, Report of the Chief of Engineers of the U.S. Army (Government Printing Office, Washington, DC, 1916) indicates that "the Patton defendants" pleaded guilty to the charge on October 11, 1915 and were sentenced to pay a fine of $250 (Case No. 255). –

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B. ~~B.~~Region 2 ~~EPA~~'s CSM~~conceptual site model~~ is S~~s~~upported by ~~findings in the~~ Site D~~d~~ata

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Commented [SJ97]: I only have 'Patton paint The Pittsburgh Press, August 27, 1902' Do we have more to cite?

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Once released into the environment, the lead carbonate and other lead-based compounds would be available to ~~could~~ mix with the surface soil/fill material and infiltrate into the subsurface and shallow groundwater during precipitation events, potentially causing "top-down" contamination wherever ~~across the Site where~~ these compounds were released or otherwise present in the environment. ~~products were stored, handled, manufactured, and disposed.~~ This pathway is consistent with the soil-to-groundwater pathway ~~discussed~~ in the RI Report's discussion of potential migration pathways (*See* Exhibit 10.A.~~X~~ at pg. 5-1) ~~under potential migration pathways~~, which states that "Impacts from soils or potential site source areas would be expected to enter the unsaturated zone (shallow fill unit) and based on the nature of the release may reach groundwater which has an average depth of 5.1 feet bgs ([below ground surface)]~~ across the Site." The RI Report also states ~~on page 5-1~~ that : "It should be noted that in complex mixtures such as groundwater, the effective solubility of individual compounds will differ significantly from the pure compound solubility." *[Id.]* Depending on pH and ligand concentrations, lead-containing solids such as lead carbonate (cerussite, $PbCO_3$), hydrocerussite [$Pb_3(OH)_2(CO_3)_2$], and anglesite ($PbSO_4$) may control the aqueous concentrations of lead in groundwater; the ultimate fate and transport of dissolved-phase lead will be dependent on the geochemistry of the aquifer over time. Dissolved lead could also adsorb to the surfaces of other solids in the soil/fill material and underlying aquifer, resulting in a source of lead from adsorption/desorption reactions.

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As presented in RI Report Figure 4-16, lead concentrations greater than 800 mg/kg are reported ~~across the Site~~ in surface and subsurface soil/fill material across the Site, with a cluster of comparatively elevated lead concentrations primarily detected in samples collected around the perimeter of Building #7 (*~~S~~see* Exhibit 10.A~~B~~., at figure 4-16~~[for Ssampling Mmap]X~~). Elevated total lead concentrations in the shallow fill groundwater were also detected in samples from monitoring wells on Lots 63 and 64, and primarily within the vicinity of Building #7 (*See* Exhibit 10.A. at Figure 4-40 ~~and Exhibit 10.B.X~~). The soil/fill material with elevated lead concentrations (greater than 800 mg/kg) acts as a source material to the shallow groundwater in this area. Assuming 800 mg/kg in the soils, and a log Kd value for lead ranging from 3.7 to 5, possible aqueous lead concentrations are in the range from 0.008 to 0.15 mg/L. Lead concentrations in groundwater were found to be greater than 0.005 mg/L across the site and as high as 0.1 mg/L.

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Region 2's ~~USEPA's conceptual site model (~~CSM~~)~~ is based on available Site data and the RI, which suggests a "top down" source of contamination due to historical operations by PPG as well as current commercial and industrial S~~s~~ite activities, including operations conducted on Lot 70. The fact that historic fill may also be a source of lead does not change the fact that both Site data and historical S~~s~~ite operations point to past facility operations as a being a major source of lead in shallow groundwater and soil at the Site. Elevated lead in the soil/fill material due to past operations ~~(both saturated and unsaturated)~~ is the source of lead contamination to the shallow groundwater, and that the lead (dissolved-phase and solid phase) is transported in the groundwater.

Exemption 5, Deliberative, Attorney-Client

PPG argues that the RI Report ~~Section IV, Page 7, Paragraph 1, Sentence 5: "Instead, the RI~~ "identified historic fill, which is present in surface and subsurface soils across the Site, as the

dominant source of lead in groundwater.~~,~~" (Dispute, p. 7), but the RI Report does not support this statement.[4]

The phrase "dominant source of lead in groundwater" does not appear ~~was not located~~ in the RI Report, and the term ~~; however, the term~~ "source of lead" only appears once, in ~~does appear once in the RI Report on page 4-16 when discussing~~ a discussion of lead concentrations in soil/fill material on Lot 1 (not groundwater) (*See* Exhibit 10.A, at figure 4-16)~~).~~. ~~–~~The RI text ~~that "T~~[t]he source of lead is likely historic fill because lead was not documented to be used in Building #1 or Lot 1." [*Id.*] The lead concentration in borings B-5 and B-96 (borings located next to Building #1 and not adjacent to another buildings) ranged from 13.5 mg/kg to 254 mg/kg (at depths of 0.5-6.5 feet bgs), which are below the preliminary remedial goal (PRG) of 800 mg/kg. ~~-~~The cited sentence does not mention the paint manufacturing activities on the south side of the Site or Building #7, where ~~with~~ elevated lead concentrations up to 6,210 mg/kg were detected in RI boring B-30, 8,690 mg/kg in RI boring B-75, and 10,800 mg/kg in historical boring HF-2. ~~–~~Note that HF-2 was collected from below the water table in the saturated zone (11-12.5 feet bgs) and is 40-800 times higher than the lead concentrations observed on Lot 1. ~~–~~This shows that the analysis of lead contamination in Lot 1 cannot be applied site-wide. Consequently, the cited discussion from the RI Report ~~sentence~~ cannot be extrapolated to the entire Site based on the known S~~s~~ite history, and the RI Report does not state or support the statement that historic fill is the dominant source of lead contamination in groundwater.~~-~~

[redacted] Exemption 5, Deliberative, Attorney-Client

biased in support of their opinion and misleading of the actual findings or statements in the RI.

[redacted] Exemption 5, Deliberative, Attorney-Client

~~Section IV, Page 7, Paragraph 3, Sentences 1-3: "The record shows that historic fill is the dominant source of lead to shallow groundwater at the Site.~~ ~~–~~To support ~~its~~PPG's argument that historic fill is a dominant source of lead in shallow groundwater, PPG argues that "[a]~~A~~s documented in the [RI Report]~~RIR~~ prepared by Woodard & Curran and approved by the Region ~~USEPA~~, historic fill is present in surface and subsurface soils throughout the Site [RIR ES-2; 3-3.] As ~~USEPA~~ Region 2 is aware, historic fill in New Jersey commonly contains elevated levels of metals, including lead." (Dispute, p. 7).

While ~~US~~the Region~~EPA~~ acknowledges that historic fill may contain elevated metals concentrations, PPG has taken the cited ~~sentence is taken~~ discussion from the RI Report out of context and fails to ~~and does not~~ acknowledge that the RI Report also recognized that once ~~the~~

[redacted] Exemption 5, Deliberative, Attorney-Client

Commented [FD107]: Seems like we should follow this sentence with a statement about why it's important

Commented [J108R107]: Added sentence

[4] PPG similarly states on page 8 of the Dispute that "USEPA's FSR incorrectly treats lead in shallow groundwater as attributable to Site operations, when in fact it is a background level and attributable to historic fill."

historic fill is deposited ~~placed~~ it may be further ~~impacted and~~ contaminated by ~~site~~ operations at the Site. ~~-~~The entire paragraph from the RI Report's Executive Summary (*See* Exhibit 10.A. at ~~page~~ pg. ES-2) states:

> ~~-~~that "~~T~~Based upon historical maps, previous investigations, and data obtained during the RI, fill material is present in surface soils throughout the Site and in subsurface soils where historical filling was conducted to reclaim land from the Passaic River. This material is considered "historic fill" as it complies with the NJDEP definition of historic fill. Historic fill *in some areas appears to have been impacted due to historical and/or current operations and chemical/waste handling at the Site.* The source of soil contaminants depends on area and contaminants and are likely due to historic fill, past/current operations (spills/releases), and illegal disposal." (emphasis added).

~~-~~Contrary to PPG's argument, the RI Report supports the Region's ~~EPA's~~ determination, as incorporated into the CSM, that contamination at the Site resulted from past and current Site operations (including operations conducted on Lot 70) as well as historic fill and illegal disposal.

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~~Section IV, Page 7, Paragraph 3, Sentence 4 (that extends to Page 8): "~~PPG cites NJDEP's Historic Fill and Diffuse Anthropogenic Pollutants Technical Guidance when it observes that "NJDEP has previously published data showing lead concentration levels in historic fill as ranging from an average of 574 ppm to a maximum of 10,700 ppm~~.~~" but the ~~[NJDEP Historic Fill and Diffuse Anthropogenic Pollutants Technical Guidance, Table 4-2, at 5 (November 16, 2011).]"~~

~~The~~ Technical Guidance ~~cited document~~ has been withdrawn by NJDEP and is no longer in circulation. We also note, however, that ~~However, it should be noted that~~ lead concentrations are not "diffuse" across the Site, and that ~~. The~~ the spatial distribution of detected lead concentrations (including the cluster of comparatively elevated lead concentrations around the perimeter of Building #7 that is correlated with elevated levels of zinc) suggest an additional source of lead to the soil/fill material that is associated with historical and current S~~s~~ite operations and not historic fill.

The Technical Guidance cited above ~~The cited document~~ has been superseded by NJDEP's "Historic Fill Material Technical Guidance" (April 29, 2013, Version 2.0). ~~-~~(*See* Exhibit 12). In accordance with the Historic Fill Material Technical Guidance, ~~The purpose of this new guidance document is:~~ "~~T~~[t]he investigator may either remediate historic fill material under the assumption that it is contaminated or they may establish, via sampling, that the historic fill material is not contaminated above NJDEP's residential soil remediation standards, N.J.A.C. 7:26D-4." The guidance further states that~~...~~ "~~W~~when contaminated historic fill material is encountered at a site ~~[above NJDEP's residential direct contact soil remediation standards]~~ that is required to conduct remediation pursuant to N.J.A.C. 7:26C-2, the person responsible for conducting remediation must remediate historic fill material consistent with the Technical Requirements and this guidance." [5]

[5] It should be noted that the NJDEP "Historic Fill Material Technical Guidance" references a residential direct contact soil remediation standard of 400 mg/kg while the PRG for the Site is based on the non-residential direct contact soil remediation standard of 800 mg/kg.

Consequently, this updated guidance by NJDEP does not provide a range of lead concentrations for historic fill material and it further supports that lead-contaminated soil/fill material at ~~Riverside Industrial Park~~the Site requires remediation. -

[redacted] Exemption 5, Deliberative, Attorney-Client

C. An Eevaluation of Aactive Ggroundwater Aalternatives that Aaddress Llead in Ggroundwater was Aappropriate for the FS

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[redacted] Exemption 5, Deliberative, Attorney-Client

Presumably in an effort to ~~remove~~discount the need for active groundwater alternatives that treat lead in groundwater from the FS Report, PPG notes that ~~Section IV, Page 8, Paragraph 1, Sentence 1: "Additionally, "~~NJDEP permits parties to assume that groundwater associated with historic fill material is contaminated above groundwater remediation standards (5 micrograms per liter [µg/L] for lead) and implement a groundwater classification exception area rather than active remediation.~~"~~ (*See* Exhibit 12~~[NJDEP Historic Fill Material Technical Guidance~~ at 8, 10 ~~(April 29, 2013).]~~" Regardless of whether PPG believes that a CEA is an appropriate alternative for contaminated groundwater at the Site, the FS Report must evaluate remedial alternatives to provide a basis, along with other information in the administrative record file, upon which EPA can propose a remedy in a proposed plan, and it is therefore entirely appropriate for the FS Report to evaluate active groundwater remediation to achieve the remedial action objectives (RAOs) for groundwater.

[redacted] Exemption 5, Deliberative, Attorney-Client

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One of the RAOs in ~~US~~Region 2~~EPA~~'s Proposed Plan for groundwater at the Site is to minimize contaminants of concern and ~~achieve the remedial action objective (RAO) of~~ restor~~ing~~ the groundwater quality to Class IIA standards. As demonstrated previously and supported by the facts in the RI report, lead in groundwater is a contaminant of concern due to past or current operators and Class IIA standards ~~which is based on~~for total lead concentrations must be met. Under CERLCA, the remedial alternatives are required to meet the two threshold criteria of overall protection of human health and the environment and compliance with ARARs. Institutional controls (ICs, ~~)~~(such as a groundwater classification exception area) cannot be used as a potential Superfund remedy to satisfy chemical-specific ARAR compliance. Region 2 CERCLA guidance states that ICs "shall not substitute for active response measures … as the sole remedy unless such active measures are determined not to be practicable, based on the balancing of trade-offs among alternatives that is conducted during the selection of remedy" [(refer to USEPA "Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites", (December 2012)]. It was therefore entirely appropriate and consistent with Region 2~~ EPA~~'s guidance for the FS Report to exclude groundwater alternatives that rely solely on ICs~~institutional controls~~. An active remedy is required to address the contaminants of concern in groundwater.~~Allowable statutory waivers for ARARs are discussed in the FS Report (Section 3.3), which was written by PPG/Woodard & Curran.~~

D~~B~~. Groundwater Alternative 5 was not an Viable ~~appropriate~~ R~~r~~emedial A~~a~~lternative for the Site and it was not A~~a~~rbitrary and C~~e~~apricious for this A~~a~~lternative to b~~e to~~ S~~s~~creened ~~it~~ O~~o~~ut~~.~~

PPG asserts~~Section IV, Page 8, Paragraph 2, Sentence 3: "On this basis, US~~ The Region's July 10 ~~Revisions~~ revisions to the FS Report "reject appropriate alternatives (i.e., Groundwater Alternative 5 presented in the June 30, 2020 draft of the FSR) and retain inappropriate groundwater alternatives by evaluating how they address lead in Site groundwater." (Dispute, p. 8). Contrary to PPG's assertion, however, Groundwater Alternative 5 would not achieve RAOs at the Site and would likely divert groundwater flow and cause contaminants to be discharged from the Site into the Passaic River.

Groundwater Alternative 5, as proposed by PPG~~/Woodard & Curran~~ in the June 30, 2020 draft FS Report, focused solely on organic contaminants associated with the underground storage tanks on Lot 64 and did not actively address lead in groundwater. ~~–~~Based on Region 2's comments, Groundwater Alternative 5 was revised by PPG in the July 17, 2020 draft FS Report to address both organic contaminants on Lots 58 and 64 and lead-contaminated groundwater proximal to Building #7. In the July 17, 2020 draft FS Report Figure 5-10 (*See* Exhibit 13, figure, embedded below), as designed and proposed by PPG, the ~~yellow~~ yellow shaded area targets shallow lead contaminated groundwater in the vicinity of Building #7.

Exhibit 13: Groundwater Alternative 5 proposed by PPG in July 17, 2020 draft FS

While the revised Groundwater Alternative 5 was intended to address both organic contamination and lead in shallow groundwater, the Region determined that this alternative ~~was judged to be~~ not implementable and would not ~~not effectivable to~~ meet the goals of the remedy~~e~~ because:

- The proposed alternative focused on in-situ remediation of groundwater contamination on Lots 63/64 and Lot 58. The remaining groundwater contamination across the Site would not ~~have~~ be~~en~~ actively remediated and instead would be subject to S~~the restrictions of s~~ite-wide institutional controls (such as a groundwater classification exception area or well restriction area). Consequently, this proposed alternative would not achieve the groundwater ~~remedial action objective (~~RAO~~)~~ to restore groundwater quality consistent with a Class IIA aquifer, and it would not be compliant with chemical-specific ARARs~~, since no active remedy would be applied to address groundwater contamination across the Site~~.
- The subsurface barrier wall proposed in Groundwater Alternative 5 requires hydraulic control of contaminated groundwater and hydrostatic relief behind such a containment structure to prevent groundwater head from building up behind the structure and driving groundwater and associated contaminants below and around the structure. As stated ~~by PPG/Woodard & Curran~~ in the ~~July~~June ~~17~~30, 2020 FS Report (Section 5.3.5) when discussing Groundwater Alternative 5 and the barrier wall: "Based on the permeable nature of the fill, the preferred groundwater flow pathway would be a more southern path from current condition as the wall blocks east flow." This southern movement would eventually continue to move east when it reached the end of the barrier; as stated in the RI Report Section 3.4, the Passaic River is a regional discharge point for groundwater in the Newark,

New Jersey area. Consequently, the barrier wall (without hydraulic controls) was unlikely to successfully prevent or effectively minimize interactions between the groundwater and the river or the ultimate discharge of contaminated groundwater to the river.

It should be noted that Groundwater Alternative 4 (which is the Region's Ppreferred aAlternative for groundwater) relies on periodic, focused in-situ remediation injections in conjunction with pump and treat. In-situ remediation technology was proposed in both Groundwater Alternative 4 and Groundwater Alternative 5 to address lead contamination in shallow groundwater. Groundwater Alternative 4, however, has more flexibility to implement the injections across the Site, where needed, beyond the focused area that would be addressed under proposed by PPG/Woodard & Curran in Groundwater Alternative 5, to address the RAO of restoring the groundwater quality to a Class IIA aquifer. With respect to the barrier wall, if the barrier wall was designed to include some form of engineering controls (such as pumping) to provide hydrostatic relief, then the containment technology would potentially would have been a viable option achieve the RAO of "P[p]revent or minimize off site transport of soil/fill containingdischarge of groundwater containing COCs COPCs to surface water to minimize the potential for interaction between the Site and the Passaic River." However, with the appropriate hydraulic controls for the barrier wall, the proposed Groundwater Alternative 5 would still not have met the RAO to restore groundwater quality consistent with a Class IIA aquifer, and it would not be compliant with chemical-specific ARARs, since no active remedy would be applied to address groundwater contamination across the Site.

EC. Lead Llevels in Ssoil and Eelevated Llead Llevels in Geroundwater are Sspateeially Ceorrelated Nnear Bbuilding 7 and Oother Llocations at the Site

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Section IV, Page 8, Item #1: "Spatial Analysis of Soil and Groundwater Impacts"

Commented [SJ115]: RAO says prevent 'or minimize' so I added this edit

Commented [FD116]: Should this refer instead to the groundwater RAO which says, "Prevent or minimize discharge of groundwater containing COCs to surface water to minimize the potential for interaction between the Site and the Passaic River "?

Commented [J117R116]: Yes! Thanks!

Commented [SM118]: Is this really "specially" and not actually "spatially"?

Commented [FD119]: This point is addressed above

PPG is incorrect when it argues that there is no spatial correlation between lead levels in soil and elevated lead levels in groundwater. (Dispute, p. 8) ~~A~~A point-by-point spatial correlation between soil/fill material sample results and groundwater results cannot be considered at this Site because of the various groundwater gradients across the Site and lack of co-located samples. Co-located soil/fill material samples and shallow groundwater samples were mainly collected from the temporary well points; however, ~~it was agreed between US~~it was agreed between Region 2~~EPA~~ and PPG that these samples were unvalidated screening samples that would be used only to design the monitoring well network. Consequently, no single soil sample can be compared to evaluate the presence or absence of lead exceedances in a co-located groundwater sample. Instead, the cluster of soil exceedances around the perimeter of Building #7 represents the result of lead contamination related to historical PPG activities in that portion of the Site, and the consistent exceedances of total lead in groundwater samples collected from around Building #7 are consistent with the presence of a Site-related source of lead in soils (*See* Exhibit 14, figure, embedded below). Other clusters of soil exceedances are observed across the Site, particularly on Lot 70.

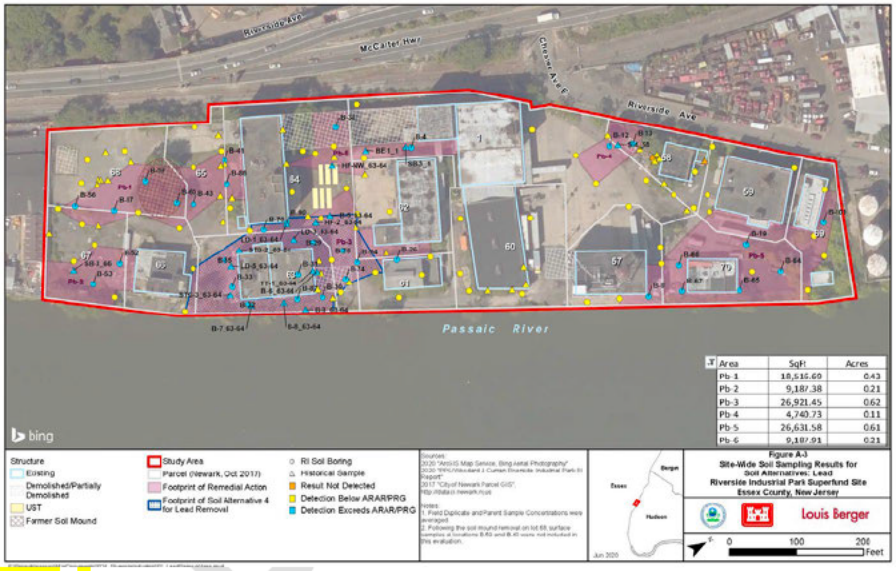

Exhibit 14: Figure A-3 from FS Report Appendix A showing delineated areas of lead in soil/fill material that exceed the PRG of 800 mg/kg and the footprint of lead removal around Building #7, which is part of EPA's Preferred Alternative for soil/fill material

It should also be noted that there are several ~~many~~ technical errors in the PPG's July 21 letter that render their point-by-point comparison inconclusive. The two major technical errors (as discussed below) are (1) inferring a causal relationship between downgradient soil/fill material and upgradient groundwater samples, and (2) mischaracterizing the actual soil/fill material samples and groundwater sample depths. These errors confound any attempt to draw conclusions from the data presentation submitted by PPG.

As stated in the RI Report (Section 3.4.1 on page 3-5), the groundwater movement is generally towards the east (towards the Passaic River) with "several local flow patterns that appear during both low and high tide including saddles, mounds, and a local flow direction to the northeast in the vicinity of Lot 58." In PPG's July 21 letter (*See* Exhibit 15), an attempt was made to compare soil/fill material and groundwater samples to demonstrate that elevated lead in soil/fill material could be found near relatively low-level concentrations of total lead in groundwater samples (*See* Exhibit 16, table, embedded below). PPG~~/Woodard & Curran~~ arbitrarily assigned soil borings to monitoring wells based on geographical distance without considering the local hydrology. This evaluation is flawed because it includes side-gradient and downgradient soil borings -that would not impact lead concentrations detected in side-gradient and upgradient monitoring wells.~~in the comparison.~~ The table below lists the monitoring wells and the "nearest soil boring" assigned by PPG in the July 21 letter. Shallow groundwater gradients are based on the piezometer surface maps presented in RI Figures 2-5 through 2-10.

Exhibit 16~~5~~: Comments on PPG Table 1 of PPG~~/Woodard & Curran~~ July 21 Letter

July 21 Table Reference	Monitoring Well Identified by PPG	"Nearest Soil Locations" Selected by PPG	Comments on Shallow Groundwater Gradients and Soil Boring Locations
PPG Table 1	E1	B-59 and B-77	Gradient is south-to-southeast depending on tides. B-77 is **side-gradient** to E-1 during high tide and low tide. B-59 is upgradient (refer to discussion below on B-59).
PPG Table 1	E6 and E7	B-4	Gradient is north-to-east depending on tides. B-4 is **downgradient** from E-6 during high tide and low tide. B-4 is spatially co-located with E-7.
PPG Table 1	MW-114	B-12 and B-13	Gradient is north-to-east depending on tides. B-13 is **downgradient** from MW-114 during high tide and low tide. B-12 is upgradient.
PPG Table 1	MW-123	B-56, B-57, and B-82	Gradient is southeast-to-south depending on tides. B-57 and B-82 are **side-gradient** and B-56 is **downgradient** during high tide and low tide.
PPG Table 1	MW-103	B-51, B-52, and B-53	Gradient is southeast. B-51 and B-53 are **side-gradient** during high tide and low tide. B-52 is upgradient.
PPG Table 1	MW-105	B-38	Gradient is north. B-38 is spatially co-located with MW-105; however, lead in the saturated zone is not characterized.
PPG Table 1	MW-106	B-35, B-36, B-37, and B-91	MW-106 is located on a groundwater mound. Groundwater gradient is radial.
PPG Table 1	MW-120	B-61, B-62, and B-101*	Gradient is either north, east, or west depending on tide. B-61 and B-62 may be upgradient under certain tidal conditions.

* PPG assigned B-101 as the "nearest boring" to MW-120 in PPG Table 1 in the July 21 letter. ~~They shifted t~~The boring assignment was shifted from MW-120 to MW-122 in PPG Table 3.

As another example, PPG attempted to draw a point-by-point comparison between the low-level total lead concentrations detected in well E-1 with two nearby soil borings (B-77 and B-59). PPG argues ~~Their argument was~~ that low-level total lead concentrations in well E-1 were not commensurate with the nearby elevated lead concentrations in the nearby soil/fill material, in an attempt to disprove a relationship between lead contamination in soils and groundwater. B-59 is upgradient of E-1; however, PPG's data evaluation ~~Woodard & Curran have evaluated the data in error~~ (refer to Figure A in the July 21 letter) contains errors, as described in the bullet items below, so that ~~their~~ its asserted findings are flawed:

(1) PPG ~~They~~ uses a temporary well point sample (TWP-B-59), which is an unvalidated~~,~~ screening point.
(2) PPG~~They~~ plots the groundwater samples at a depth of approximately 6-7 feet bgs, which according to the Woodard & Curran field notes, is actually the depth to water from the top of the well casing. Groundwater samples were collected at ~~T~~the pump intake, which was ~~(groundwater samples) were collected at~~ approximately 10 feet below top of casing (refer to RI Appendix G).
(3) ~~They~~ PPG plots a soil sample [B-59(FILL)100317] representing the above-ground debris pile (3 feet above ground) incorrectly at depth in the subsurface at 3 feet bgs.
(4) ~~They plot~~ PPG plots both a subsurface sample [B-59(5-7)100317]~~, a~~ and its field duplicate~~,~~ with ~~both with~~ an incorrect depth. Note that this sample was collected at 2-4 feet bgs, according to Woodard & Curran field notes and database entry. The sample ID of 5-7 feet bgs is incorrect, according to Woodard & Curran. When correctly plotted, this point is above the E-1 well screen.
(5) ~~They~~ PPG plots a subsurface sample [B-59(12-13.5)100317] with an incorrect depth. Note that this sample was collected at 9-10.5 feet bgs according to Woodard & Curran field notes and database entry. The sample ID of 12-13.5 feet bgs is incorrect, according to Woodard & Curran.

When these errors are corrected, the detected total lead concentrations in E-1 groundwater samples collected at 10 feet below the top of well casing (maximum total lead concentration of 1.3 ug/L) are commensurate with the one spatially comparable soil/fill material sample collected in the nearby boring B-59, at a depth of 9.0-10.5 feet bgs, with a relatively low-level detected lead concentration of 34.9 mg/kg. The data therefore do not support PPG's view that ~~-~~low-level total lead concentrations in well E-1 were unrelated to the elevated lead concentrations in the nearby soil/fill material.

Note that similar technical errors were found in the remaining figures generated by PPG~~/Woodard & Curran~~ in its ~~their~~ July 21 letter.

~~F~~D. Lead C~~c~~oncentrations in the N~~n~~orthern P~~p~~ortion of the Site do not I~~i~~ndicate that L~~l~~ead in G~~g~~roundwater at the Site is A~~a~~ttributable to H~~h~~istoric F~~f~~ill~~.~~

~~Section IV, Page 8, Item #2 "Analysis of Groundwater Impacts in Northern Portion of Site"~~

PPG ~~Latham & Watkins (Gary Gengel) extracted a sentence from USEPA's July 14 response letter~~ argues that ~~and continued by stating:~~ "[The Region]~~USEPA~~ presents the northern portion of

Commented [SM120]: "Intake" should be plural, or change "were" to "was"
Commented [SJ121]: See edit
Commented [SM122]: Thanks
Commented [FD123]: This clause isn't clear
Commented [J124R123]: Seems okay to me bgs means below ground surface Maybe this is the confusion?

the Site as an area that 'has not been substantially impacted by lead contamination.' …([*see* Exhibit __, USEPARegion 2 July 14 Letter at 1.)] While it is accurate that Ssite operations in the northern portion of the Site did not involve lead, lead is present in all media." (Dispute, pp. 8-9). PPG then draws conclusions about the presence of lead on the remainder of the Site based on conditions found on the northern portion. Such conclusions are not supported by the RI Report or the data.

When comparing impacts of lead for the northern and southern portions of the Site, generally, the northern portion has not been as substantially impacted as the southern portion. However,

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""Historic fill in some areas appears to have been impacted due to historical and/or current operations and chemical/waste handling at the Site. The source of soil contaminants depends on area and contaminants and are likely due to historic fill, past/current operations (spills/releases), and illegal disposal." (See Exhibit 10.BA., RI Report at ES-2). This When applying this statement applies to the is true in the northern section of the Site, where there are some areas have not been significantly impacted by lead contaminationcontamination, while others areas on the northern section of the Site have been impacted by placement of historic fill material and by both past and current operations, including operations conducted on Lot 70.

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For example, Oone area in the northern section of the Site that has not been as substantially impacted by placement of historic fill containing lead is the northwest corner. As stated in the RI Report: on page 3-3, ""

> Fill material is documented at the surface throughout the Site with greater fill thicknesses associated with areas reclaimed from the Passaic River. The majority of the Site (except the northwest section) was reclaimed from the Passaic River with imported fill, which is described as a Loamy Sand or Sand Loam. Below the fill material, the next deeper layer that makes up the geology immediately under the Site is a silt loam, representing the former Passaic River sediment bed. Consistent with historical maps of shoreline development (Figure 1-3), this layer was not identified in borings on the northwest side of the Site, where less shoreline modifications occurred. (Exhibit 10.A., RI Report at 3-3)."

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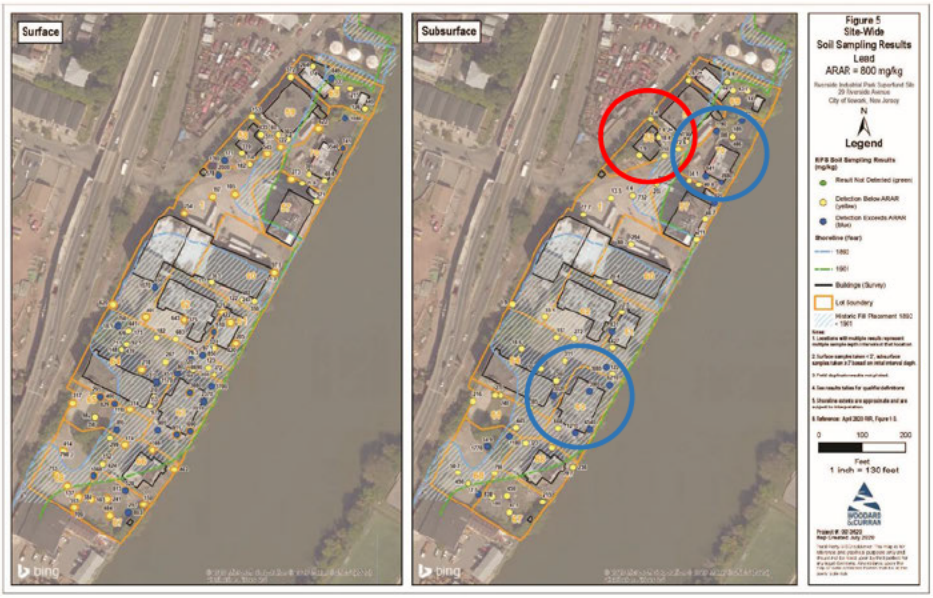

Exhibit 17~~6~~: Figure 5 from PPG~~Woodard & Curran~~'s July 21 Letter. Red circle added to emphasize northwest corner of Site and subsurface soils west of the 1873 shoreline. Clusters of elevated lead concentrations around Building #7 and on Lot 70 are evident in figure (blue circles). Note that Exhibit 17~~6~~ only displays RI borings whereas Exhibit 14 displays RI borings and historical borings.

Commented [FD127]: We'll need to check the exhibit numbers before we finalize

Commented [J128R127]: I can do that

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Exemption 5, Deliberative, Attorney-Client

Overall, with the exception of MW-118 (which has been impacted by Building #10 operations; refer to FS Report Section 3.5.5), the shallow groundwater on the northern side of the Site has not been as substantially impacted by lead contamination, recognizing that the deep groundwater total lead concentration is approximately 2.0 ug/L. ~~(~~*See* Exhibit ~~6~~7~~1~~8, table~~d~~, embedded below, ~~below~~ reports the maximum total lead concentration per shallow monitoring well (non-detected total lead concentrations are presented at the laboratory reporting limit of 1 ug/L) on the northern portion of the Site (excluding MW-118). ~~–~~There are four wells on the northern section of the Site with

maximum total lead concentrations greater than the PRG of 5 ug/L. Monitoring wells MW-117 and MW-120 have elevated total lead concentrations that are three times greater than the PRG of 5 ug/L.

- Groundwater movement near MW-120 is affected by the groundwater mound or ridge centered on Lot 70, causing gradients to shift at MW-120 from east to north to west. In either case, soil/fill material from Lot 70 is located upgradient. (Shallow groundwater gradients are based on the piezometric surface maps presented in RI Figures 2-5 through 2-10; *See* Exhibit 10.B.) According to the RI Report on page 1-8, the company Federal Refining Company operated on Lot 70 since 1985, recycling precious metals. "The metal recovery process involved meltdown of scrap metal and recovery of metal using various acidic and caustic liquids." As part of actions taken pursuant to the NJDEP Site Remediation Program, soil/fill materials were excavated in 2012 and an asphalt cap placed over the property in 2014. Post-excavation samples indicated elevated lead levels (over 800 mg/kg) remain under the asphalt cap, which were verified during the RI, and may be acting as a source of lead contamination to MW-120.
- Groundwater movement near MW-117 is also affected by the groundwater mound or ridge centered on Lot 70 and extends to the south, bifurcating groundwater movement between MW-117 and MW-114. MW-117 is downgradient of multiple potential soil/fill material sources. The tidal communication with MW-114 is noted in the RI Report in Section 3.4.3 under the tidal evaluation.

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Exhibit 18: Maximum Total Lead Concentration in Monitoring Wells on North Side of Site

Monitoring Well Number on the North Side of the Site	Maximum Total Lead Concentration (ug/L) Reported for Three Sampling Events over 11-month Period
E-4	7.4
E-5	1.4
E-6	3.3
E-7	2.0
E-8	1.0
MW-114	1.0
MW-115	1.0
MW-116	2.0
MW-117	17.7
MW-119	7.9
MW-120	25.3
MW-121	4.2
MW-122	7.0
MW-124	1.0

In contrast, on the southern portion of the Site, a cluster of elevated total lead concentrations (in particular at MW-107, MW-108, and MW-110) were detected~~, are observed~~ in the vicinity of Building #7, where soils contain lead from Site operations ~~known lead contaminated soils have been detected,~~ and groundwater continuously moves to the east-southeast during high tide and low

tide (*See* Exhibit 19, embedded below). ~~It is acknowledged that s~~Some areas of the southern portion of the Site have shallow groundwater concentrations similar to the northern section, which is to be expected~~,~~ since not all areas of the Site were impacted similarly by past/current operations and lead-contaminated soils (at levels greater than 800 mg/kg) were not reported across the Site. However, based on the available soil and groundwater data, Region 2 is associating the ~~total~~ lead contamination in the shallow groundwater to the lead-contaminated soils, which is a S~~s~~ite-related contaminant.

***Exhibit 19~~8~~**: Maximum Total Lead Concentration in Monitoring Wells on South Side of Site*

Monitoring Well Number on the South Side of the Site	Maximum Total Lead Concentration (ug/L) Reported for Three Sampling Events over 11-month Period
E-1	1.3
E-2	3.7
E-3	2.1
MW-101	1.0
MW-102	12.8
MW-103	18.7
MW-104	10.4
MW-105	45.2 *
MW-106	26.5 (near Building #7)
MW-107	54.2 (near Building #7)
MW-108	109 (near Building #7)
MW-109	20.85 * (near Building #7)
MW-110	39.9 (near Building #7)
MW-111	14.6 (near Building #7)
MW-112	8.2
MW-123	1.2
* Average of field sample and duplicate	

Site groundwater data (all events) are plotted below in two Pareto Charts (*See* Exhibits 20 and 21, figures, embedded below), which show the frequency and magnitude of lead detections in groundwater in descending magnitude (left to right), as well as their cumulative impact (orange line) plotted against the secondary (right) axis ranging from 0 percent when the first sample is examined and extending to 100 percent when the last sample is examined. For monitoring wells located on the north side of the Site, about half of the cumulative total lead detected in three rounds of sampling was in samples from MW-120 and MW-117, with only 25 percent of all samples exceeding 5 ug/L of total lead, and the remaining 75 percent of samples below the total lead PRG of 5 ug/L (also see table below). In contrast, in the southern portion of the Site where lead-based paint manufacturing was likely actively conducted, about half of the cumulative total lead detected in three rounds of sampling was in MW-105, MW-107, MW-108, and MW-110, with 56 percent

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of all samples exceeding the PRG for total lead (also see table below).[6] Again, these charts demonstrate the significant differences between the northern and southern portions of the Site and developing broad conclusion using either the northern or southern portions is not appropriate. Elevated groundwater lead concentrations are correlated to areas where lead was likely released as a result of current or past operations. ~~. Please note that MW-107, MW-108, and MW-110 are located around the perimeter of Building #7.~~

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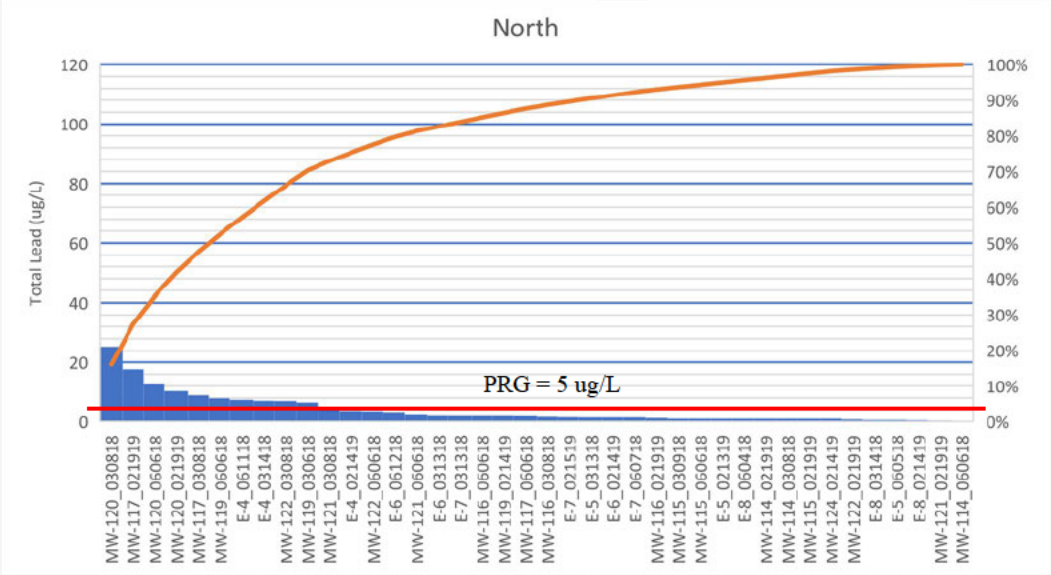

Exhibit 209: Pareto (frequency) Chart for Total Lead Concentrations in Monitoring Wells on the North Side of Site

[6] MW-107, MW-108, and MW-110 are located around the perimeter of Building #7.

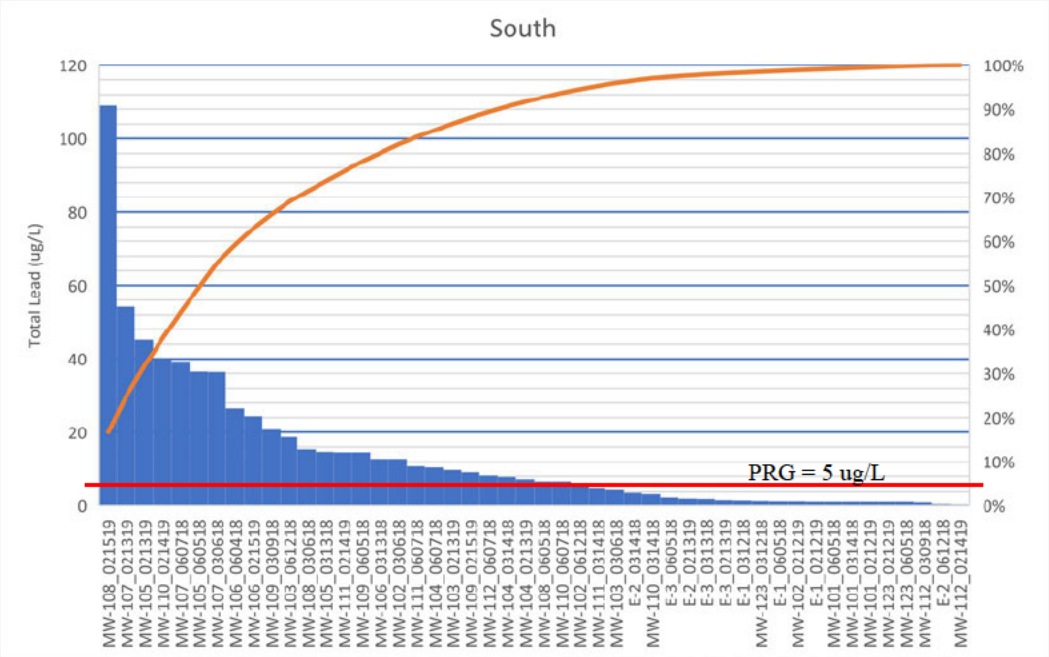

Exhibit 2140: Pareto (frequency) Chart for Total Lead Concentrations in Monitoring Wells on the North Side of Site

An alternatcive way of presenting the same data is to report the percentage of groundwater samples that exceed a specific concentration. As shown in the table below (*See* Exhibit 22, table, embedded below), a groundwater sample on the south side of the Site was approximately two times more likely to exceed the PRG (5 ug/L) for total lead than a groundwater sample from the north, and a sample from the sSouth is eight times more likely to exceed 20 ug/L than a sample from the North.

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Exhibit 2241: Percent of Groundwater Samples Exceeding a Specific Concentration

Total Lead in Groundwater	Percent of Groundwater Samples Exceeding a Specific Concentration			
	>5 ug/L	>10 ug/L	>15 ug/L	>20 ug/L
Northern Portion of the Site	25%	10%	5%	2.5%
Southern Portion of the Site	56%	40%	25%	21%

Instead of examining the data collectively, PPG attempted another spatial analysis based on a point-by-point comparison. As noted above, the point-by-point comparison presented in the PPG's July 21 letter is inconclusive because it includes side-gradient and downgradient soil borings in the comparison. The table below (*See* Exhibit 23, table embedded below) lists the monitoring wells and the "nearest soil boring" assigned by PPG urran in the July 21 letter. Shallow

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groundwater gradients are based on the piezometer surface maps presented in RI Figures 2-5 through 2-10 (*See* Exhibit 10.B.).

Exhibit 23~~12~~: Comments on PPG Table 2 of PPG July 21 Letter

July 21 Table Reference	Monitoring Well Identified by PPG	"Nearest Soil Locations" Selected by PPG	Comments on Shallow Groundwater Gradients and Soil Boring Locations
PPG Table 2	E-4	B-22, B-27, and B-95	Gradient is northeast. B-27 and B-95 are **side-gradient** and B-22 is **downgradient** during high tide and low tide
PPG Table 2	MW-117	B-10, B-11, and B-105	Gradient is either north, east, or west depending on tide. B-10 is **side-gradient** or **downgradient**; B-105 is upgradient only under certain tidal conditions. (Note that no samples were collected from boring B-11.)
PPG Table 2	MW-120	B-61 and B-62	Gradient is either north, east, or west depending on tide. B-61 and B-62 may be upgradient under certain tidal conditions.
PPG Table 2	MW-122	B-102	Gradient is either northwest, west, or southwest depending on tides. B-102 is **downgradient** during high tide and low tide.

Based on the analyses above, elevated groundwater lead concentrations are correlated to areas where lead was likely released as a result of current or past operations. The data do not support PPG's contention that, based on conditions in the northern portion of the Site, lead in shallow groundwater throughout the Site is attributable to historic fill.

~~Section IV, Page 9, Item #3: Groundwater Lead Concentration Variability Over Time~~

G~~E~~. ~~There are I~~insufficient D~~d~~ata ~~to S~~support PPG's C~~e~~ontention that there is S~~s~~ignificant V~~v~~ariability in G~~g~~roundwater L~~l~~ead C~~e~~oncentrations, I~~i~~ndicating that L~~l~~ead C~~e~~oncentrations in S~~s~~oil A~~a~~re not the S~~s~~ole F~~f~~actor in D~~d~~etermining G~~g~~roundwater L~~l~~ead C~~e~~oncentrations~~.~~ (Dispute, p. 9).

The RI field program for groundwater (excluding the temporary well point samples) consisted of three groundwater sampling events over a 11-month period. The data collected ~~re~~ are~~is~~ insufficient ~~data~~ to support~~–~~ a trend analysis or to statistically evaluate groundwater variability over time. Moreover, as stated in the RI Report (*See* Exhibit 10.B~~A~~. at~~on~~ ~~page~~ 4-26) when discussing the shallow groundwater results: "The variations of results may be within reproducibly range of measurement or reflect site conditions at time of sampling (seasonal variations, tides or recent precipitation events)."

H. ~~Section IV, Page 9, Item #4: Analysis of Additional Lead Sources: PPG incorrectly states that~~ Region 2's ~~EPA's~~ CSM and July 10 FS Report Revisions D~~d~~o ~~not~~ A~~a~~ccount for A~~a~~dditional S~~s~~ources of L~~l~~ead (Dispute, p. 9).

~~Latham & Watkins (Gary Gengeal)~~ aPPG asserts that the Region 2's CSM and July 10 FS Report do~~es~~ not account for additional sources of lead, including historic fill material. (Dispute, p. 9).

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While [redacted] Exemption 5, Deliberative, Attorney-Client [redacted] ~~ter. However,~~ the Region's analyses and data discussed above establish ~~indicate~~ that historic Site operations are major sources of lead in shallow groundwater at the Site, the CSM does not rule out, or fail to account, for additional sources of lead such as historic fill material, which indeed can contain metals and other contaminants that impact the groundwater. ~~elevated metals concentrations, the historic fill may be further impacted by site operations. A~~gain, as stated in the RI Report, [redacted] Exemption 5, Deliberative, Attorney-Client [redacted] "Historic fill in some areas appears to have been impacted due to historical and/or current operations and chemical/waste handling at the Site. The source of soil contaminants depends on area and contaminants and are likely due to historic fill, past/current operations (spills/releases), and illegal disposal." (~~*RI Report*~~*See* Exhibit 10.B~~A~~., p. ES-2). As recognized in the RI Report, and in the CSM, ~~This statement includes~~ past operations by PPG as well as current commercial and industrial activities, including operations conducted on Lot 70, are sources of soil contamination.

I. PPG incorrectly states that "metals attributable to historic fill are not the result of releases or operations at the Site and, therefore, constitute background concentrations." (Dispute, p. 9)

~~[USEPA, Role of Background in the CERCLA Cleanup Program (April 26, 2002).] Based on analyses of Site data, background lead concentrations in shallow groundwater are at least 25 µg/L.~~

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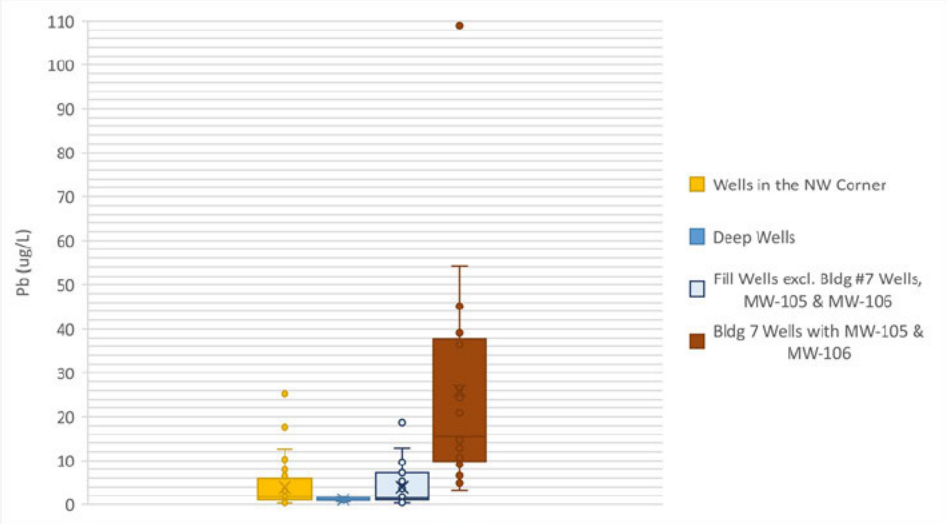

Exhibit 254134: Distribution of Total Lead Concentrations in Monitoring Wells

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~~Latham & Watkins (Gary Gengeal)~~ PPG also asserts that a release of potable water from the Newark City system in 2012, caused by Region 2's rupture of a pipe while digging test pits, may be an additional lead source to groundwater at the Site. (Dispute, pp. 9-10). The data do not support PPG's contention. PPG ~~Latham & Watkins (Gary Gengeal)~~ cited 2018 water quality results ~~in their letter~~ in its Dispute, while the release of potable water occurred in 2012. In the City of Newark's 2012 Water Quality Report, the year of the ~~alleged~~ release, the 90th percentile concentrations of lead are reported as 9.0 ppb in the Pequannock System and 3.4 ppb in the NJDWSC system. Using the Pequannock's 90th percentile value reported in 2012 (9.0 ppb), it

Commented [SM141]: Is this really alleged?

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would have required a release of approximately 264,000 gallons of City of Newark drinking water to have contributed one gram of lead to the Site. The amount of water released was not documented but this rupture was resolved in a few hours and sampling continued the next day. ~~Nowhere near this amount of water was released by the rupture.~~ It is very unlikely that this single event made a significant contribution to lead contamination at the Site

~~JGF~~. None of the "additional contributing factors" cited by PPG would render any of the FS Report's groundwater alternatives ineffective (Dispute, p. 10)

~~Section IV, Page 10, Item #5: Analysis of Contributing Factors~~

~~None of the "additional contributing factors" cited by PPG would render any of the FS Report's groundwater alternatives ineffective (Dispute, p. 10)~~

Region 2 recognizes that NJDEP has classified this aquifer as Class IIA, despite site-specific conductivity readings that indicate brackish conditions (refer to Exhibit 10.B. ~~RI Report~~, Section 3.4). Groundwater remedial alternatives have been evaluated ~~proposed~~ in the FS Report to address a ~~hypothetical~~ future use scenario that presents an unacceptable risk/hazard to human health and to satisfy the RAO of restoring ~~a remedial action objective (RAO) to restore~~ groundwater quality. Each of the proposed groundwater remedies w~~ill~~ould encounter technical challenges, as discussed in the FS Report under 'Implementability' in the detailed comparison of alternatives. ~~US~~EPA will require a pre-design investigation (PDI) to support the final design for the selected remedy.

Groundwater Alternatives 3, 4, and 5 all propose ~~the use of~~some level of in-situ remediation ~~technology~~ as the active remedy to address VOC-, SVOC-, and lead-contaminated groundwater. The FS Report (Section 5.3.3) acknowledges that the effectiveness of in-situ remediation is dependent on the geochemistry of the aquifer, stating that "It should be recognized that many of the COCs are co-located or are in close proximity, and the in-situ treatment compounds (iron sulfide) require very different geochemical conditions to be present in the area to be effective." Consequently, any geochemical challenges expected in Region 2's ~~P~~preferred ~~A~~alternative for groundwater (Groundwater Alternative 4) would also be encountered in the implementation of PPG's Groundwater Alternative 5. Region 2 is aware that geochemical processes affect the mobility of metals in the groundwater. [redacted] Exemption 5, Deliberative, Attorney-Client

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Commented [FD143]: We can mention the estimated amount of water that was released, if we have that information

Commented [SJ144R143]: I would need WSP to analyze

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[redacted] Exemption 5, Deliberative, Attorney-Client

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